

Claims

1. An improved method for producing chemical pulp from lignocellulosic material by means of alkaline cooking, including cooking the material to pulp at cooking temperature in a batch digester, reducing the temperature of the cooked material at the end of the cook, essentially relieving overpressure, and then discharging the cooked material from the digester by means of pumping, and then treating the pulp in equipment operating essentially at atmospheric or higher pressure, **characterized** in that the cooked material is cooled to a temperature between about 60 °C and about 85 °C using wash liquor before pumping said cooked material as a fluid suspension from the digester, and that said temperature is maintained during the processing stages between the digester and a first substantial delignification/bleaching stage.

2. A method according to claim 1, **characterized** in that a cooling stage is carried out in the digester using wash filtrate or water having a temperature from about 60 to about 80 °C.

3. A method according to claim 1 or 2, **characterized** in that said wash filtrate has an ionic strength below 1.5 mol/l.

4. A method according to any claim 1 - 3, **characterized** in that said wash filtrate has a pH between about 9 and about 13.

5. A method according to any claim 1-4, **characterized** in that the cooling stage in the digester is carried out using liquid displacement with an average flow of between about 10 and about 50 dm³/min per m³ digester volume, preferably between about 10 and about 35 dm³/min per m³ digester volume.

6. A method according to any claim 1-5, **characterized** in that in case the pH in the liquid surrounding the pulp during the process stages between the digester and a first substantial delignification/bleaching stage remains above 11, said steps are carried out with a residence time less than about 180 min, preferably less than about 120 min.

7. A method according to any claim 1 - 6, **characterized** in that during the process stages between the digester and a first substantial delignification/bleaching stage, a pH level below about 13 is maintained.

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8. A method according to any claim 1 - 7, **characterized** in that during the process stages between the digester and a first substantial delignification/bleaching stage, the ionic strength in the liquor surrounding the cooked material is maintained essentially between 0.01 and 1.5 mol/l.

9. A method according to any claim 1-8, **characterized** in that the temperature during the process stages between the digester and a first substantial delignification/bleaching stage is adjusted by means of heat exchangers (20, 24).

10. A method according to any claim 1-9, **characterized** in that the first substantial delignification/bleaching stage is an oxygen delignification stage.

11. A method according to any claim 1-10, **characterized** in that for pulp transfer between stages, one or more variable speed pumps are used.

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12. A method according to any claim 1-11, **characterized** in that one or more screening stages are carried out at an ionic strength below 0.4 mol/l.

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